REMARKS

This amendment is in response to the Final Office Action mailed November 25, 2008. Claims 1, 11, 15, 16, 21, and 26 have been amended, claim 9, 10, 20, and 25 have been canceled without prejudice, and claims 35-39 have been added. Claims 1-3, 8, 11-13, 15, 16, 21, 26, and 35-39 are presently pending. No new matter has been added.

§103 Rejections

Claims 1, 2, 9-13, 15, 16, 20, 21, 25, and 26 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,361,439 to Kawamoto ("Kawamoto") in view of U.S. Patent No. 6,572,475 to Okabe et al. ("Okabe") and U.S. Patent No. 6,959,094 to Cascone ("Cascone"). Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kawamoto, Okabe, and Cascone in view of U.S. Patent No. 6,760,050 to Nakagawa ("Nakagawa"). Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kawamoto, Okabe, and Cascone in view of U.S. Patent Pub. No. 2005/0179701 to Jahnke ("Jahnke"). The Applicants traverse these rejections.

Claims 1, 15, 21, and 26 each recite the providing of spatial sound data in at least two channels of a single audio file associated with a fast-moving object where the recorded spatial sound data includes spatial approaching sound data recorded in a first channel of the audio file and spatial retreating sound data recorded in another channel of the audio file. None of the cited references teach or suggest recording spatial approaching sound data in one channel of a single audio file and spatial retreating sound data in another channel of that audio file.

An advantage of this arrangement is that only a single audio file is loaded to provide both the approaching sound and retreating sound for a fast moving object with appropriate Doppler shift. Moreover, the sounds are recorded and so there is no necessity to engage in calculations or other modifications to create the approaching/retreating sounds or to mix these sounds together. This is valuable in many game applications because this reduces the time and processor overhead needed to produce these sounds. There is no need to load additional audio files as the object switches from approaching to retreating (or vice versa) or to compute and modify sound elements (e.g., adding a Doppler effect to a sound) or mix sound elements.

The Office Action acknowledges that "Kawamoto does not disclose that the recorded spatial sound data includes spatial approaching sound data recorded in one channel and spatial retreating sound data in another channel of the audio file." Office Action, p. 3. The Office Action also acknowledges that "Okabe does not explicitly state that the sounds of 'the engine sound of car A becomes gradually higher (Doppler Effect)' and 'the engine sound becomes gradually lower (Doppler Effect)' are recorded with the Doppler effect." Office Action, p. 3.

The Office Action turns to Cascone, however Cascone does not even mention the Doppler effect; much less suggest that sounds be recorded to account for the Doppler effect. The Office Action acknowledges that Cascone does not mention the Doppler effect. Office Action, p. 14. Thus, none of the cited references, alone or in combination, teach or suggest recorded spatial sound data that includes spatial approaching sound data recorded in one channel of a single audio file and spatial retreating sound data recorded in another channel of that audio file.

Moreover, Cascone does not teach or suggest recording related sound data (e.g., approaching or retreating sound data) in two channels of a single audio file. At best, the background section of Cascone, which is relied upon in the Office Action, teaches recording different sounds in different audio files. Cascone does not teach or suggest the advantages of recording sounds in different channels of a single audio file to reduce the time needed to access each audio file. This is particularly useful for the approaching and retreating sound data for fast moving objects because in many instances the two sounds will be used sequentially (e.g., approaching sound data followed by retreating sound data) for the object. None of the other references teach or suggest providing the approaching/retreating sound data as different channels of a single audio file.

Furthermore, Cascone teaches combining the sounds from different audio files using an interpolation technique. Cascone, Col. 1:21-57. The present invention does not require such interpolation. Instead, the approaching and retreating sound data can be played without interpolation by playing the corresponding channel of the single audio file. Kawamoto also discloses a technique for calculating and modifying sounds. Kawamoto, Fig.6. (Okabe is silent with respect to how the Doppler effect is achieved.) These interpolation and other calculation

techniques for combining sounds require additional processor time and resources. None of the references teach or suggest providing approaching and retreating sound data in two separate channels of the audio file so that both can be accessed, without requiring additional interpolation, calculation, or mixing, when the audio file has been loaded.

For at least these reasons, claims 1, 15, 21, and 26, as well as the remaining claim which depend therefrom, are patentable over the cited references. The Applicants respectfully request withdrawal of the rejections of these claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner has any questions or concerns, the Applicant encourages the Examiner to contact the Applicant's representative, Bruce Black, by telephone to discuss the matter.

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Respectfully submitted,

By 

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